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  Biases in visual attention from a psychological and neurophysiology perspective

  Our brains provide us with a seductive illusion: the belief that we fully perceive the vibrant complex world in which we live. My goal is to discover how this illusion comes about, how our behavior can be influenced by our perceptions, and how our behavior can sometimes be dissociated from our perceptions altogether. Until now, my research has focused primarily on the mechanisms underlying visual attention, which can be thought of as the glue that holds the illusion of our perceptual world together. Even though I have used quite different tools to explore this question, my behavioral and neurophysiological data can be summarized quite succinctly: biases in visual attention can be described as the expression of the target, or object of attention, on a topographical map of space. The objects on this map are represented in terms of their stimulus-driven salience -- the greater the distinctiveness of the object, the greater the representation and the weaker the distinctiveness, the weaker the representation. The relevance of the target to the observer influences this pattern by further enhancing the representation of the object. During this presentation, I will summarize this research, highlight some recent results, and discuss the implications of these results for our understanding of the cognitive psychology of visual attention. I will conclude by describing the next phases of my research plan.

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